

ABSTRACT

The invention is the microcontroller, which comprises CPU,
a bus controller, an instruction address bus of a first bit number
5 and an instruction code bus of a second bit number, which connect
between the CPU and bus controller, and, further, a debug support
unit, which is connected to the instruction address bus and
instruction code bus. This debug support unit is also connected
to an external in-circuit emulator via a tool bus of a third
10 bit number that is smaller than the first bit number and via
a bus-status signal line that reports on the status of this tool
bus. The debug support unit has a data output circuit, which,
in response to the status information signal, when the branch
information contains a branch, outputs the converted instruction
15 address serially to the tool bus, and when the branch information
contains no branch, outputs a branchless signal to the tool bus.